Amendments to the Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-19. (Canceled)

20. (Currently Amended) A process for treating a substrate by plasma nitridation, comprising:

providing the substrate having an oxide film thereon; and

irradiating plasma having an electron temperature of 0.5 to 2.0 eV on the oxide film using a mixed gas comprising ~~a rare~~ argon gas and nitrogen gas to form an oxynitride film, wherein

the plasma is irradiated on the oxide film at a temperature of 250 to 500°C and under a pressure of 7 to 260 Pa,

a nitrogen atom content in the oxynitride film has a distribution such that the maximum value Ns of the nitrogen atom content in the oxynitride film at a surface of the oxynitride film opposite a surface facing the substrate is 10 to 40 atomic percent, and the maximum value Nb of the nitrogen atom content in the oxynitride film at the surface facing the substrate side is 0 to 10 atomic percent, [[and]]

the ratio Ns/Nb is 2 or more, and

the oxynitride film has an electrical film thickness from 1.0 to 2.5 nm.

21. (Canceled)

22. (Previously Presented) A process according to claim 20, wherein the plasma is generated using microwave irradiation by using a plane antenna member having a plurality of slots.

23. (Canceled)

24. (Previously Presented) A process according to claim 20, wherein the oxide film is formed by plasma processing or thermal oxidation.

25. (Currently Amended) A process for treating a substrate by plasma nitridation, comprising:

forming an oxide film on the substrate; and

irradiating plasma on the oxide film using a mixed gas comprising ~~a rare~~ argon gas and nitrogen gas to form an oxynitride film, wherein

the plasma is irradiated on the oxide film at a temperature of 250 to 500°C and under a pressure of 7 to 260 Pa,

a nitrogen atom content in the oxynitride film has a distribution such that the maximum value Ns of the nitrogen atom content in the oxynitride film at a surface of the oxynitride film opposite a surface facing the substrate is 10 to 40 atomic percent, and the maximum value Nb of the nitrogen atom content in the oxynitride film at the surface facing the substrate side is 0 to 10 atomic percent, [[and]]

the ratio Ns/Nb is 2 or more, and

the oxynitride film has an electrical film thickness from 1.0 to 2.5 nm.

26. (Canceled)

27. (Previously Presented) A process according to claim 25, wherein the plasma is generated using microwave irradiation by using a plane antenna member having a plurality of slots.

28. (Previously Presented) A process according to claim 25, wherein the ratio Ns/Nb is 4 or more.

29. (Currently Amended) A process for forming a gate oxynitride film, comprising:

providing a substrate having an oxide film thereon; and

irradiating plasma having density of $1x10^{10}$ to $5x10^{12}/cm^3$ and an electron temperature of 0.5 to 2.0 eV on the oxide film using a mixed gas comprising ~~a rare~~ argon gas and nitrogen gas to form the oxynitride film, wherein

the plasma is irradiated on the oxide film at a temperature of 250 to 500°C and under a pressure of 7 to 260 Pa,

a nitrogen atom content in the oxynitride film has a distribution such that the maximum value Ns of the nitrogen atom content in the oxynitride film at a surface of the oxynitride film opposite a surface facing the substrate is 10 to 40 atomic percent, and the maximum value Nb of the nitrogen atom content in the oxynitride film at the surface facing the substrate side is 0 to 10 atomic percent, [[and]]

the ratio Ns/Nb is 2 or more, and

the oxynitride film has an electrical film thickness from 1.0 to 2.5 nm.

30. (Canceled)

31. (Previously Presented) A process according to claim 29, wherein the plasma is generated using microwave irradiation by using a plane antenna member having a plurality of slots.

32. (Canceled)

33. (Canceled)